

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An image processing apparatus that handles image data, comprising:

a dividing unit ~~which divides~~ for dividing image data into large blocks of a prescribed size and further ~~subdivides these~~ subdividing the large blocks into multiple smaller blocks;

a large block isolated point calculation unit ~~which calculates~~ for calculating the number of isolated points contained in each large block established by ~~the said~~ dividing unit;

a small block isolated point calculation unit ~~which calculate~~ for calculating the number of isolated points contained in each small block established by ~~the said~~ dividing unit; and

a halftone-dot region determination unit ~~which determines~~ for determining whether or not a large block is a halftone-dot region based on the number of isolated points calculated by ~~the said~~ large block isolated point calculation unit and the number of the isolated points calculated by ~~the said~~ small block isolated point calculation unit.

2. (Currently Amended) An image processing apparatus as claimed in Claim 1,

wherein said halftone-dot region determination unit is operable to determine that a large block is a halftone-dot region if the number of isolated points in the large block equals or exceeds a first prescribed value, and the number of isolated points in each small block contained in the large block equals or exceeds a second prescribed value.

3. (Currently Amended) An image processing apparatus as claimed in Claim 2,

wherein said ~~the~~ second prescribed value is smaller than said ~~the~~ first prescribed value.

4. (Currently Amended) An image processing apparatus as claimed in Claim 1, further comprising:

an image processing unit ~~which corrects for~~ correcting the image data based on the results of determination by said halftone-dot region determination unit.

5. (Currently Amended) An image processing apparatus as claimed in Claim 4, further comprising:

an image forming unit ~~which performs for~~ performing image formation based on the image data corrected by said image processing unit.

6. (Currently Amended) An image processing apparatus that handles image data, comprising:

a dividing unit ~~which divides~~ for dividing image data into multiple small blocks;

a small block isolated point calculation unit ~~which calculate~~for calculating the number of isolated points contained in each small block established by ~~the~~said dividing unit;

a large block isolated point calculation unit ~~which calculates~~for calculating the number of isolated points contained in ~~the~~a large block of the image data, the large block being composed of multiple smaller blocks based on the small block isolated point totals calculated by ~~the~~said small block isolated point calculation ~~units~~unit; and

a halftone-dot region determination unit ~~which determines~~for determining whether or not ~~a~~the large block is a halftone-dot region based on the number of isolated points calculated by ~~the~~said large block isolated point calculation unit and the number of isolated points calculated by ~~the~~said small block isolated point calculation unit.

7. (Currently Amended) An image processing apparatus as claimed in Claim 6,

wherein said halftone-dot region determination unit is operable to determine that a large block is a halftone-dot region if the number of isolated points in the large block equals or exceeds a first prescribed value, and the number of isolated points in each small block contained in the large block equals or exceeds a second prescribed value.

8. (Currently Amended) An image processing apparatus as claimed in Claim 7,

wherein ~~said the~~ second prescribed value is smaller than ~~said the~~ first prescribed value.

9. (Currently Amended) An image processing apparatus as claimed in Claim 6, further comprising:

an image processing unit ~~which corrects~~for correcting the image data based on the results of determination by said halftone-dot region determination unit.

10. (Currently Amended) An image processing apparatus as claimed in Claim 9, further comprising:

an image forming unit ~~which performs~~for performing image formation based on the image data corrected by said image processing unit.

11. (Currently Amended) An image processing method that handles image data, said method comprising the steps of:

dividing image data into large blocks of a prescribed size and further subdividing ~~these the~~ large blocks into multiple smaller blocks;

calculating the number of isolated points contained in ~~the~~ each large block established via division and the number of isolated points contained in ~~the~~ each small block established via division; and

determining whether or not ~~the a~~ large block is a halftone-dot region based on the calculated number of large block isolated points and the calculated number of small block isolated points.

12. (Currently Amended) An image processing method as claimed in Claim 11,

wherein said determining step comprises determining ~~determine~~ that a large block is a halftone-dot region if the number of isolated points in the large block equals or exceeds a first prescribed value, and the number of isolated points in each small block contained in the large block equals or exceeds a second prescribed value.

13. (Currently Amended) An image processing method as claimed in Claim 12,

wherein ~~said the~~ second prescribed value is smaller than ~~said the~~ first prescribed value.

14. (Currently Amended) An image processing method that handles image data, said method comprising the steps of:

dividing image data into multiple small blocks;

calculating the number of isolated points contained in each small block established via division;

calculating the number of isolated points contained in ~~the a~~ a large block of the image data, the large block being composed of multiple smaller blocks based on the calculated number of small block isolated points; and

determining whether or not the large block is a halftone-dot region based on the calculated number of large block isolated points and the calculated number of small block isolated points.

15. (Currently Amended) An image processing method as claimed in Claim 14,

wherein said determining step comprises determining ~~determine that a~~ the large block is a halftone-dot region if the number of isolated points in the large block equals or exceeds a first prescribed value, and the number of isolated points in each small block contained in the large block equals or exceeds a second prescribed value.

16. (Currently Amended) An image processing method as claimed in Claim 15,

wherein ~~said~~ the second prescribed value is smaller than ~~said~~ the first prescribed value.

17. (New) An image processing apparatus as claimed in claim 5, further comprising a character determination unit for determining whether at least one character region exists in the image data, wherein:

said image processing unit is operable to correct the image data based on the results of determination by said halftone-dot region determination unit and said character determination unit; and

said image forming unit is operable to perform image formation based on the image data corrected by said image processing unit.

18. (New) An image processing apparatus as claimed in claim 1, wherein said small block isolated point calculation unit comprises a plurality of isolated point counters respectively corresponding to the multiple small blocks contained in a large block, each of said plurality of isolated point counters being operable to count the number of isolated points contained in a corresponding one of the small blocks contained in the large block.

19. (New) An image processing apparatus as claimed in claim 18, wherein said halftone-dot region determination unit comprises:

- a first determination unit for determining whether the calculated number of isolated points in a large block equals or exceeds a threshold value;

- a second determination unit for determining whether a predetermined number of said plurality of isolated point counters of said small block isolated point calculation unit have each counted at least one isolated point in the corresponding small block contained in the large block; and

- a third determination unit for determining whether the large block is a halftone-dot region based on the determination results of said first determination unit and second determination unit.

20. (New) An image processing apparatus as claimed in claim 19, wherein said third determination unit is operable to determine that the large block is a halftone-dot region if said first determination unit determines that the calculated number of isolated points in the large blocks equals or exceeds the threshold value, and said second determination unit determines that the predetermined number of

said isolated point counters have each counted at least one isolated point in the corresponding small block contained in the large block.

21. (New) An image processing apparatus as claimed in claim 6, wherein the number of isolated points contained in the large block equals the number of isolated points that said small block isolated point calculation unit calculates for each small block composing the large block.

22. (New) An image processing apparatus as claimed in claim 6, wherein said large block isolated point calculation unit is operable to calculate the number of isolated points contained in the large block by calculating the number of isolated points contained in a plurality of contiguous small blocks within a predetermined area of the image data.

23. (New) An image processing apparatus as claimed in claim 9, further comprising a character determination unit for determining whether at least one character region exists in the image data, wherein:

said image processing unit is operable to correct the image data based on the results of determination by said halftone-dot region determination unit and said character determination unit; and

said image forming unit is operable to perform image formation based on the image data corrected by said image processing unit.

24. (New) An image processing method as claimed in claim 11, further comprising the steps of:

correcting the image data based on the results of determination of said determining step; and

forming images based on the corrected image data.

25. (New) An image processing method as claimed in claim 14, further comprising the steps of:

correcting the image data based on the results of determination of said determining step; and

forming images based on the corrected image data.